

REMARKS

This paper is responsive to an Office Action dated October 5, 2004. Prior to this response claims 1-33 were pending. After amending claim 1, 4, 14, 17, 22, 24, and 31, and canceling claims 2-3, 15-16, and 23, claims 1, 4-14, 17-22, and 24-33 remain pending.

In Section 3 of the Office Action, objections have been made that the drawings do not show every detail specified in the claims. Specifically, the Office Action states that the drawings fail to show “at least one locking register includes a plurality of locking registers”. In response the Applicant notes that Fig. 1 shows locking registers “X” (110), “Y” (112), and “XX” (114). Thus, the figure shows both “at least one locking register” as well as “a plurality of locking registers”. Support for the figure and the above-mentioned claim language can be found in the specification at page 6, lines 11-16. The further clarify the issue, claim 31 has been amended to delete the mention of “the at least one locking register”.

Section 4 of the Office Action objects to the incorrect use of the word “in”, as used in claim 22. In response, claim 22 has been amended to use the word —is—, as suggested in the Office Action.

Section 5 of the Office Action objects to the length of the Abstract. In response, the Abstract has been amended to be less than 150 words.

In Section 7 of the Office Action claim 31 has been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written requirement. In response, claim 31 has been amended to delete reference

to “the at least one locking register” and instead recites just --a plurality of locking registers--. Support for the claim can be found in Fig. 1 and on page 6 of the specification.

In Section 9 of the Office Action claims 1 and 14 have been rejected under 35 U.S.C. 102(e) as anticipated by MacDonald et al. (“MacDonald”; US 6,557,101). The Office Action states that MacDonald discloses all the elements of the claimed invention. In response, claim 1 has been amended to include the subject matter of claims 2 and 3, now canceled. Claim 14 has been amended to include the subject matter of claims 15 and 16, now canceled. Since claims 2, 4, 15, and 16 include subject matter now found anticipated by the Examiner, claims 1 and 14 should no longer be found anticipated.

In Section 13 of the Office Action claims 2-13 and 15-21 have been rejected as unpatentable under 35 U.S.C. 103(a) with respect to MacDonald in view of Cline et al. (“Cline”; US 4,665,506). With respect to claims 2 and 15, the Office Action acknowledges that MacDonald fails to disclose configuration registers. The Office Action states that Cline discloses configuration registers and that it would have been obvious to combine references to protect against unwanted overwrites. With respect to claims 3 and 16, the Office Action acknowledges that MacDonald fails to disclose a locking register. The Office Action further states that Cline shows a locking register, and that it would have been obvious to combine references to prevent accidental overwrites. This rejection is traversed as follows.

An invention is unpatentable if the differences between it and the prior art would have been obvious at the time of the invention. As

stated in MPEP § 2143, there are three requirements to establish a *prima facie* case of obviousness.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck* 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991).

In Fig. 1 MacDonald shows series-connected network elements 10, which are responsible for moving data from one network traffic port to another. During upgrades, the control signals provided to network elements 10 by control logic 12 may take on an indeterminate value, which may cause the network units 10 to act in spurious manner, and disrupt network service (col. 3, ln. 6-24). To prevent the above-mentioned problem, MacDonald adds a latch 20 (Fig. 2). Now, during upgrade operations the latch 20 can be opened, causing the network elements to maintain their initial values. After reprogramming is complete, the latch can be opened, returning control of the network elements 10 to the microprocessor 14 and control logic 12 (col. 3, ln. 33-49).

Generally, Cline describes a memory array 3 that both accepts and outputs data on memory data bus 21 (col. 4, ln. 58-63). The different memory functions are performed in response to a set of control signals, as described at col. 5, ln. 3-21, and shown in Table 1. The use of parity and pipeline bits are described in col. 6 through col. 7. In col. 7, ln.

21-34, Cline describes a configuration register that supplies the pipeline bit and two parity bits. In col. 7, ln. 51 through col. 8, ln. 3, Cline describes a write protection circuit. The write protection is implemented in files stores in registers 10 and 11. The file to be used is selected in response to decoding the CT lines. Thus, when Cline describes write protection, he is concerned with protecting the memory array 3, not the configuration register 8. In support of this point it should be noted that configuration register is not connected to data lines 21.

With respect to the first *prima facie* requirement to support a case of obviousness, there appears to be no motivation to look to the Cline reference, to make a modification to MacDonald. MacDonald is concerned with preventing network devices from becoming locked in faulty state, when updates are performed to the control devices. His solution is to temporarily isolate the network devices from the control devices, using a latch. There is no motivation to modify MacDonald's system for the write protection of data. In MacDonald's system the data is the network traffic. MacDonald does not acknowledge any problem with the network units accidentally overwriting network traffic data. Even if the network units become locked in a faulty state, data is not overwritten. Rather, the network units just fail to pass network traffic. MacDonald's control logic 12 and microprocessor 14 do *not* provide data to the network elements.

Although it is technically possible to combine the references given enough time for experimentation, to make the claimed invention obvious there should be some motivation expressed in the references to make the combination. Here there is no motivation to employ Cline's complicated data overwrite protection scheme to simply disconnect a control line.

Regardless, even if there was a motivation to combine references, the Office Action has not demonstrated that the modification of the cited prior art references points to the reasonable expectation of success in the present invention, which is the second requirement of the obviousness analysis. Even if Cline could be combined with MacDonald, there is no expectation from the combination that a locking register (as defined in the claimed invention) can be used to prevent a configuration register from being loaded with data.

With respect to the third *prima facie* obviousness requirement, the references even when combined do not disclose all the elements of the claimed invention. Claims 1 and 14, as amended, recite the elements of a lock set and a locking register. Even if the Cline and MacDonald inventions are interpreted to be a form of register write protection, neither of the references discloses a write protection scheme that uses a lock set or a locking register. A lock set is a set of data that is loaded into a locking register. A locking register “freezes” the configuration register in either a write or write-prevent state in response to the lock set (or non-lock set). Neither Cline’s memory map files, nor MacDonald’s latch is a mechanism that operates like the lock register. Alternately stated, neither Cline nor MacDonald describe a lock register that prevents an associated configuration register from being provisioned with new data, in response to being loaded with a lock set.

Therefore, the combination of Cline and MacDonald does not explicitly describe all the limitations of the base claims, from which the rejected claims depend. Neither does the combination of references suggest a modification that makes either claim 1 or 14 obvious. Claims 4-13, dependent from claim 1, and claims 17-21, dependent from claim 14,

enjoy the same distinctions from the cited prior art as the base claims, and the Applicant requests that the rejections be removed.

Claims 22-33 have been rejected as unpatentable under 35 U.S.C. 103(a) with respect to Cline. With respect to claim 22 and 23, the Office Action states that Cline describes a locking register that is used to prevent the loading of data into the configuration register. This rejection is traversed as follows.

As noted above, Cline's write protection circuit is concerned with protecting memory array 3, not the loading of data into configuration register 8. The data input/output lines 21 are not connected to the configuration register. Rather, the configuration register is part of the control system. Write protection of the memory array 3 is implemented by selecting one of the write circuit protect files loaded in registers 10 and 11. The selection is made with the CT lines (col. 7, ln. 50-58).

The extensive differences between Cline and the claimed invention stem from the type of memory that is being protected. Since Cline is protecting a large memory array, files must be established that map to memory areas. Thus, the write protection files loaded in Cline's registers 10 and 11 (see Table 3) map to memory areas K0 through K7. Cline's protection scheme is enabled on an operation-by-operation basis in response to the CT bits (col. 10, ln. 54-64). Also see timing diagrams Fig. 3 through Fig. 6.

The claimed invention works completely differently. First, a small section of memory is protected, a register as opposed to an array. More fundamentally, however, the claimed invention stays in an unlocked state until the lock register is loaded with a particular combination of data (the lock set). Likewise, the lock register prevents the configuration

register from being loaded, until the lock set is replaced with a different set of data. Thus, the protection is not enabled on an operation-by-operation basis. Cline does not describe to use of a lock register to gate the loading of data into a configuration register. Cline does not describe the use of a lock set to control a lock register. Neither does Cline disclose a lock register with a constant control status resulting from leaving the lock set (or non-lock set) in place.

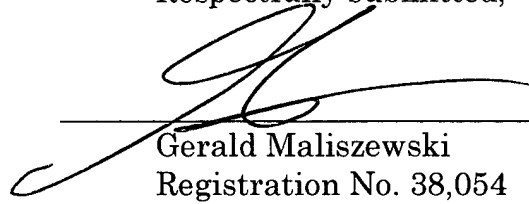
With respect to the first *prima facie* requirement, there is no suggestion that the Cline reference be modified in such a way as to make the claimed invention obvious. Cline is write protecting a much larger memory structure. Necessarily, his system is complicated. There would be little motivation for one skilled in the art to use a system that accesses memory file maps to protect a relatively simple register. Likewise, there is no expectation in the reference that the claimed invention locking register can be realized, even if there was a suggestion that Cline be used to write protect registers.

With respect to the third *prima facie* requirement, as mentioned above, Cline does not disclose the elements of a lock set or a locking register. Ultimately, Cline's system performs write protection in response to the CT control signals, whereas the claimed invention protection scheme is enabled by controlling the contents of a (locking) register. The content-control scheme adds additional security step that is just not present in Cline's control signal scheme. Thus, Cline does not explicitly describe all the elements of claims 22, or suggest modifications that would make claim 22 obvious. Claims 24-33, dependent from claim 22 enjoy the same distinctions from the cited art. The Applicant respectfully requests that the rejection be removed.

It is believed that the application is in condition for allowance and reconsideration is earnestly solicited.

Respectfully submitted,

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